

# **Volvo Service Manual Contents**

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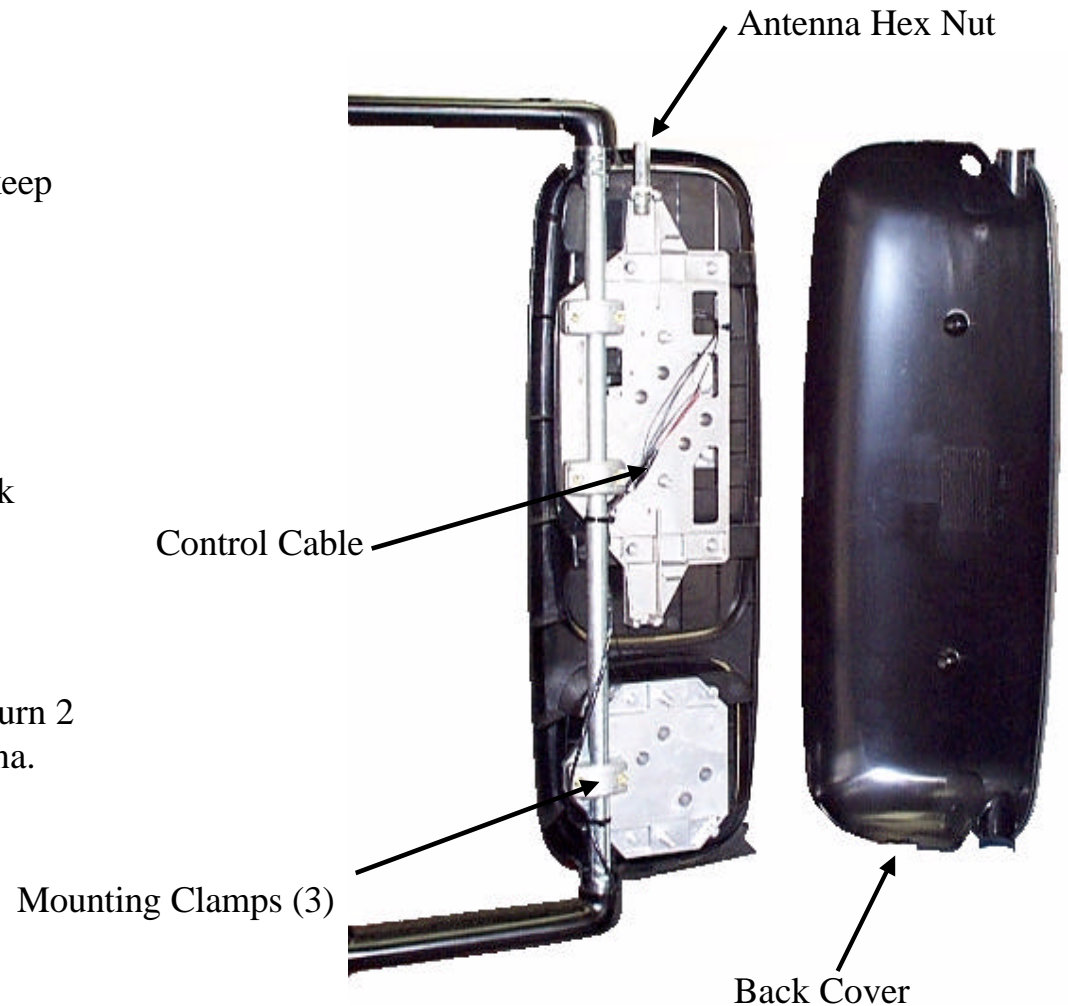
Revision October 31, 1997

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## (G.1) Removing back cover

- 1) Remove antenna. Hold antenna hex with wrench to keep from turning.
- 2) Remove 2 screw covers from back cover.
- 3) Remove 2 screws with 6mm allen head driver.
- 4) Remove back cover from bottom first. Carefully work cover over hex nut for antenna. Cover may break if removed from top first.

Reattach by replacing back cover from top first, then return 2 screws (Torque to  $4 \pm 1$  N-m), 2 screw covers and antenna. Hold antenna hex with wrench to keep from turning.



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## (G.2.1) Mirror plate exchange - removing mirror plate

Your Lang-Mekra Mirror System is equipped with a durable mirror plate. The mirror glass is reinforced with anti-shattering adhesive to prevent splintering in the event of breakage. We strongly recommend the prompt replacement of damaged mirror plates.

If you have a heated mirror, be careful not to damage the wiring or the heater connection. If you have a remote control mirror, use the remote to place the mirror in removable position. Avoid manual movement of the remote mirror system.

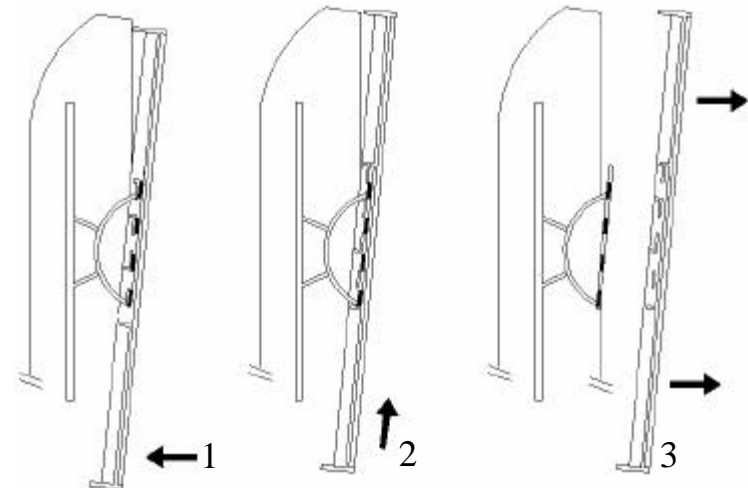
To remove mirror plate:

- 1) Move mirror plate in at the bottom - manually if necessary, but remotely if possible.
- 1) Slide mirror plate up from bottom with firm steady pressure; when disengaged, carefully lift mirror plate to expose heater wires.
- 2) Disconnect wires simply by pulling on wire terminal cover.

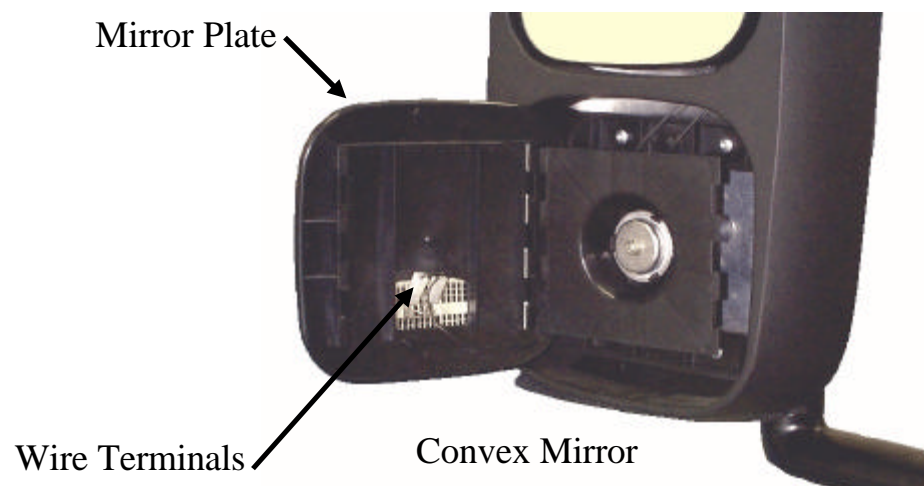
Do **NOT** pull on wires. Do **NOT** cut wires.

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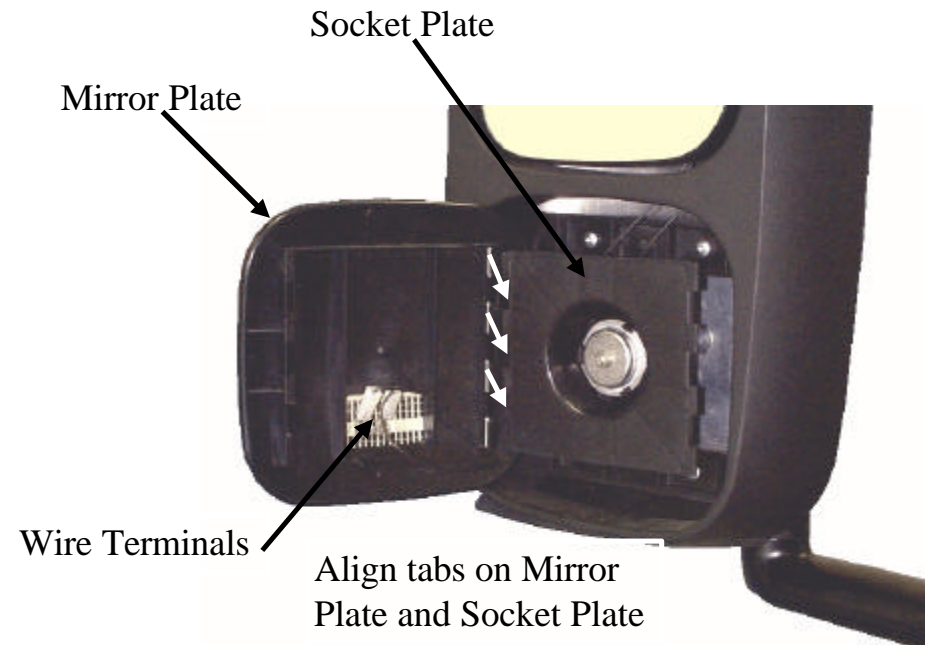
Side view of Main Mirror



## (G.2.2) Mirror plate exchange - replacing mirror plate

- 1) Attach wire terminal to back of new mirror plate.
- 2) Keep wires free of socket plate; do not pinch them between socket plate and mirror plate.
- 3) Attach mirror plate to socket plate, so that tabs of mirror plate and socket plate interlock. Socket Plate should be in at the bottom. Identical to as when it was removed.
- 4) Slide mirror down into lock position for full attachment.

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Convex Mirror Shown.  
Installation is identical for Main Mirror.

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# (T.1) Remote control mirror adjustment fails to respond

You have a four-way adjustable mirror, integrated with the design of your truck. The flat, top mirror is adjustable via remote control; the convex, bottom mirror is manually adjustable.

Even though all mirrors have been manufactured to high quality standards, problems sometimes arise. Our statistics show that 90% of all remote mirror movement difficulties trace to problems with cabling or connectors.

If you are having trouble moving your mirror via remote control, check the following connection points:

- 1) Check connection at power supply.
- 2) Check connector inside mirror head. See **(G.1) Removal of back cover**. Is cable disconnected?
- 3) Check circuit breaker. Reset if necessary. Circuit breaker is located in power distribution module.
- 4) Check all cables and plugs for dislocated pins and visibly damaged wires. Exchange cable if problems persist.

- 1) Check mirror for short circuits. Is there power at both ends of cables? If there is power only at door but not at mirror head, then cable is defective. Exchange cable at local dealership.
- 2) If remote controlled mirrors on both sides don't work, there is a strong possibility that the circuit breaker, wire harness or truck switch is at fault. To test this possibility, connect mirror motor cable to a power supply. If motor works, then problem is truck-internal, probably a wire harness or defective switch.
- 3) If all wire harnesses are fine, exchange defective motor. See **(T.3) Actuator Replacement**.

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## (T.2.1) Mirror movement is unreliable

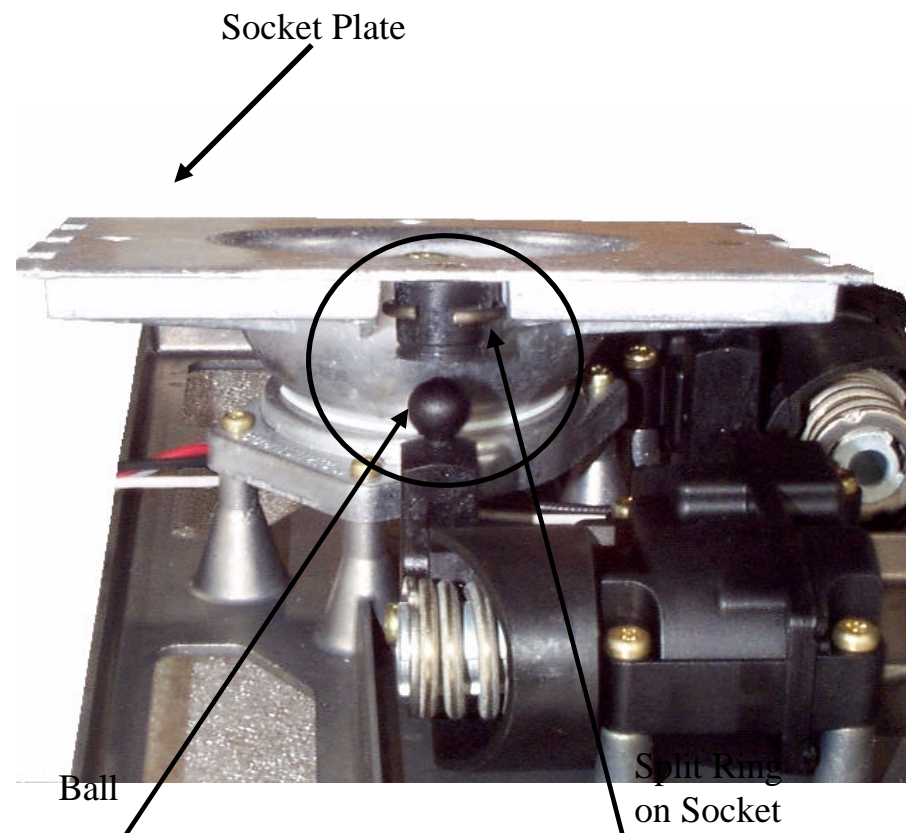
If mirror will not move strictly horizontally or vertically, but rather moves at unintended diagonal angles, or is limited strictly to horizontal or vertical motion, then an electrical connection is bad or the ball socket has separated under the mirror plate. The ball and socket design is intended to separate under excessive stress to protect the function of the mirror system and to allow adjustment in the absence of power.

To check ball and socket:

- A) Remove mirror plate. See **(G.2.1) Mirror plate exchange- removing mirror plate.**
- B) Check ball & socket joint.
- C) Assemble ball & socket if required. See **(T2.2) Ball and Socket joint applications.**

To check electrical connections see **(T.1) Remote control mirror adjustment fails to respond.**

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## (T.2.2) Ball and Socket joint applications

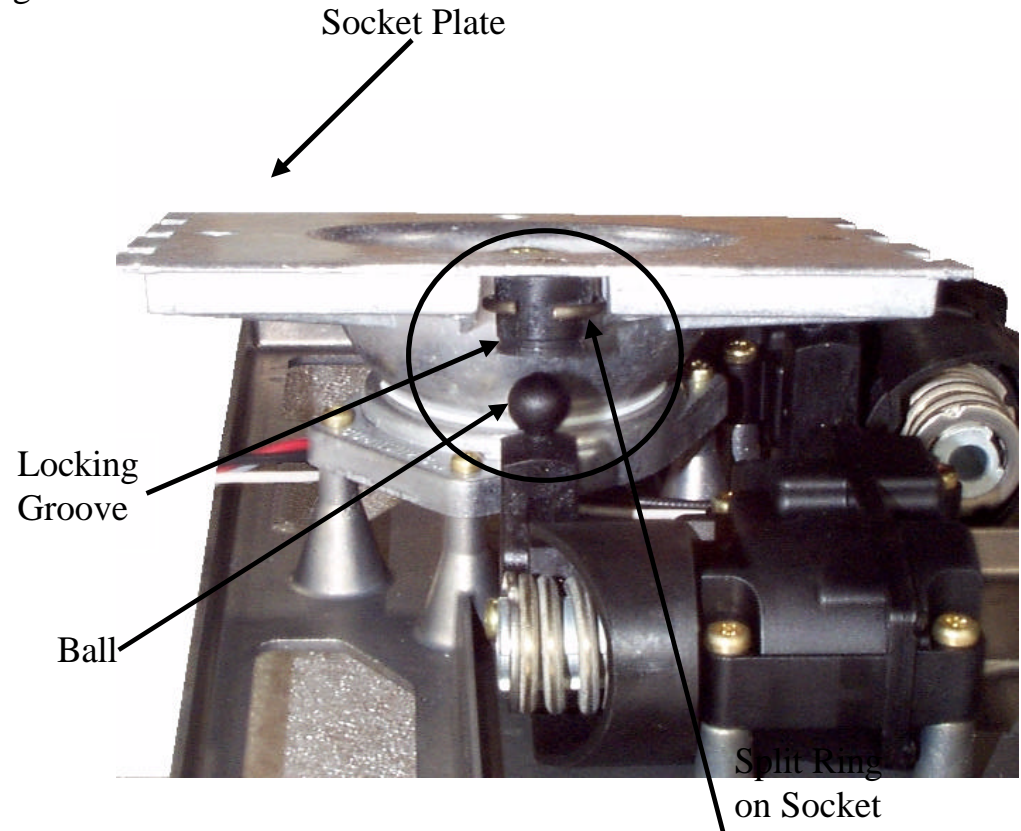
### Disassembling of the Ball and Socket Joint.

- 1) Using a flat-head screw driver, slide the split ring up away from the motor and out of the locking groove.
- 2) Firmly pull up on the socket plate until the ball becomes dislocated from the socket.

### Assembly of the Ball and Socket Joint.

- 1) Insure that the split ring is not in the locking groove. If required, using a flat-head screw driver, slide the split ring up and away from the motor.
- 2) Align the ball with the socket and press down until ball snaps into place.
- 3) Slide split ring down until it snaps into the locking groove.

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## (T.3) Actuator replacement

If it has definitely been determined that the actuator needs replacement by trouble shooting according to (T.1) **Remote control mirror adjustment fails to respond**, and (T.2.1) **Mirror movement is unreliable**, then proceed with actuator replacement.

### Actuator Removal :

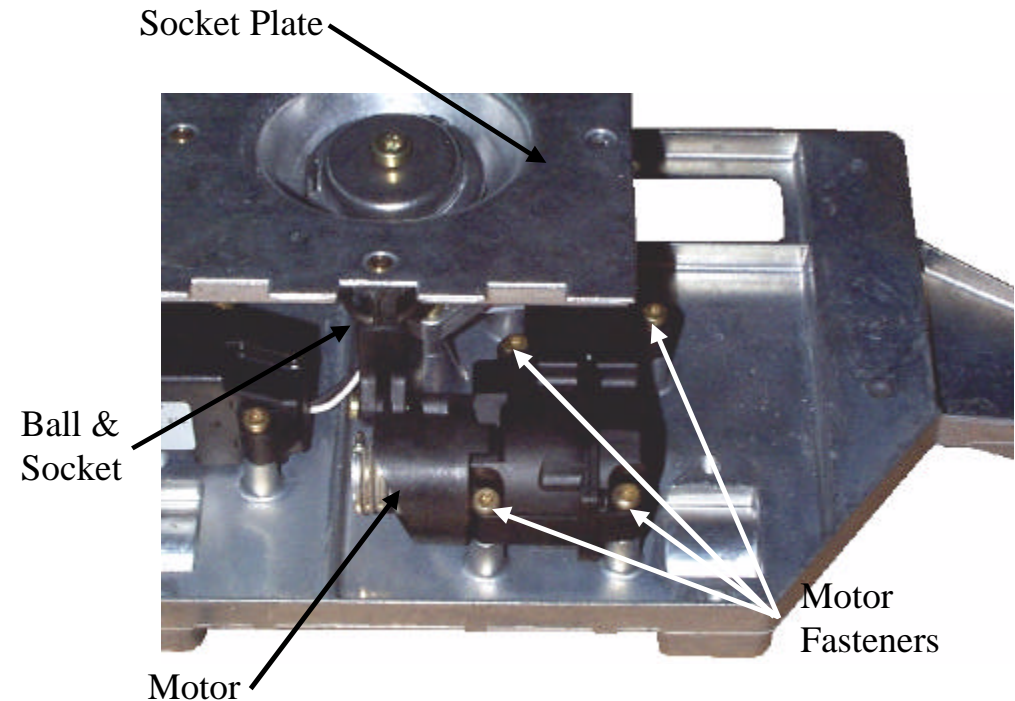
- 1) Remove flat main mirror glass. See (G.2.1) **Mirror plate exchange - removing mirror plate.**
- 2) After identifying the non-functioning motor, disassemble the ball and socket joint. See (T.2.2) **Ball and Socket joint applications.**
- 3) Remove the four retaining screws with a right angle 4mm torx wrench.
- 4) Cut the 2 wires off the motor. Leave 2½“ of wire from the connector.

### Actuator installation:

- 1) Strip wire ends on actuator and connector and securely connect wires to the same color.
- 2) Fasten motor with four screws to  $1.5 \pm 0.5$  N-m

- 3) Reassemble the ball and socket joint. See (T.2.2) **Ball and Socket joint applications.**
- 4) Replace mirror glass. See (G.2.2) **Mirror plate exchange - replacing mirror plate.**

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